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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Andrus, Sceales, Starke & Sawall 100 East Wisconsin Avenue Suite 1100 Milwaukee, WI 53202-4178				
EXAMINER				
CROWE, DAVID R				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,889

Applicant(s)

GRAHAM, MORTON

Examiner

DAVID R. CROWE

Art Unit

2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4 and 6-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

The amendment to the claims filed on 9/23/2008 has been entered.

Claim Objections

1. Claim 1 is objected to because of the following informalities: Line 6 recites "translucent member", however, said member was amended in line 2 to be transparent. Appropriate correction is required.

Claim 13 is objected to because of the following informalities: "special" appears to be a typographical error in place of --spatial--, meaning related to the space. Appropriate correction is required.

Claims 12, 14, 16 and 17 are objected to because of the following informalities: The examiner objects to the change in dependency of these claims. Canceling claim 5 does not renumber the claims thereafter. The change in dependency leads to antecedent basis problems with respect to the striations. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham (WO 02/103658).

Re claim 1: Graham discloses an illumination device [10] comprising an elongate transparent member [16] of a material having substantially total internal reflection of light, an LED [30] light source [15] located at least at one edge of the transparent member to pass light into and along the member by primary diffusion of the light [abstract], and a second elongate member [32] arranged in superimposed relationship with the elongate transparent member [16] thus to define a gas space [38] there between; characterized in that the transparent member [16] is adapted, in use, to function as a leaky wave guide allowing light to escape into the gas space for secondary diffusion therein, and in that the second elongate member is of a translucent and not a transparent material thus being adapted to diffuse and be illuminated by the secondarily diffused light. [See pages 4-10 and figure 2]

Re claim 6: Graham discloses the LED light sources [30] are separately disposed at opposite ends of the elongate transparent member.

Re claim 7: Graham discloses a reflector [44] disposed on a part of the surface [20] of the elongate transparent member [16].

Re claim 8: Graham discloses a reflector/ reflective property disposed on a part of the surface of the second elongate member, facing the elongate transparent member as understood from, "Part of the inner surface [facing plate 16] of the cover [32] may be reflective." [Page 5, paragraph 3]

Re claim 9: Graham teaches the first elongate member is of an acrylic material.

[Page 7, paragraph 2]

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Hulse et al (US 6,550,952). The teachings of Graham have been discussed above.

Re claims 2 and 4: Graham further teaches the transparent member [16] may be arcuate in shape. [Page 4, paragraph 7]

Graham fails to teach the transparent member being a rod of circular cross section and the second member being a tube surrounding the rod and defining the gas space therein.

Hulse et al discloses an illumination device for illumination of messages comprising a first elongate member [waveguide 10], and LED light source [16] located at least at one end of the first member to pass light into and along the member, a second member [14] arranged in superimposed relationship with the first translucent member thus to define a gas space there between; wherein the first member [10] is a

rod, circular in cross section, and the second member [14] is a tube surrounding the rod, and defining the gas space there between. [See figures 1-3, column 4 line 44 through column 5 line 48].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the shapes of the components of Graham as suggested therein with respect to modification of the shape of plate [16] and cover [14] into the configuration taught by Hulse et al to create the transparent member [16] of Graham as a round rod and cover [14] of Graham as a tube analogous to the edge lit rod [10] and tube [14] of Hulse in order to illuminate a message configured as in an elongate manner or repeated to be view from multiple angles.

It has been held that the mere change in shape of components disclosed in the prior art is within the ordinary skill of a worker in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1976).

Re claim 14: Graham modified by Hulse fails to teach the reflector [44] co-extruded with the cover [14] or the plate [16].

Hulse does however teach the first reflective portion [13] inlaid into the first member and therefore being flush therewith.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the parts of Graham such that the reflective portion [44] of Graham is inlaid into the second member [14] in order to maintain a flush surface capable of directing light out of the second member only in the desired direction. The

method of forming the reflector with the second member in a flush manner by extrusion per se is not germane to the issue of patentability of the device itself.

Re claim 15: As applied to Graham modified by Hulse as discussed above. Hulse further teaches a reflector [20a] disposed on the surface of the rod [10] or just as easily moved to the inner surface of tube [14] which appears to occupy $\frac{1}{4}$ of the circumference of the rod.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the reflector [44] one-fourth of the way around the rod shaped member [16] of Graham modified by Hulse in order to selectively determine the direction of illumination light emitted from the rod.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Hulse et al and Levinson et al (US 6,299,338). The teachings of Graham have been discussed above.

Graham fails to teach the first member [18] having an undulating surface.

Hulse et al discloses an illumination device for illumination of messages comprising a first elongate member [waveguide 10], and LED light source [16] located at least at one end of the first member to pass light into and along the member, a second member [14] arranged in superimposed relationship with the first translucent member thus to define a gas space there between; wherein the first member [10] is a rod, circular in cross section, and the second member [14] is a tube surrounding the rod, and defining the gas space there between. [See figures 1-3, column 4 line 44 through column 5 line 48].

Levinson et al teaches a decorative lighting apparatus [400] with translucent member [430] and light emitting diodes [410] disposed on the edge of the translucent member. Figure 1 shows the transmissive body [130] having an undulating surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the shapes of the components of Graham as suggested therein with respect to modification of the shape of plate [16] and cover [14] into the configuration taught by Hulse et al to create the transparent member [16] of Graham as a round rod and cover [14] of Graham as a tube analogous to the edge lit rod [10] and tube [14] of Hulse in order to illuminate a message configured as in an elongate manner or repeated to be view from multiple angles.

It further would have been obvious to one of ordinary skill in the art at the time the invention was made to additionally modify Graham in view of Hulse by curving the rod shaped first member [16] of Graham modified by Hulse as shown by Levinson et al in order to provide a wider variety of patterns and shapes to increase the decorative nature of the signage device of Graham.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham. The teachings of Graham have been discussed above.

Although Graham fails to explicitly teach the second translucent member [14] being made from acrylic or polycarbonate, it would have been obvious to one of ordinary skill in the art to select acrylic or polycarbonate as the material of the second member since the first member is already made from said materials, and it has been

held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

8. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham modified by Hulse et al as applied to claim 2 in view of Oyama (US 5,233,679). The teachings of Graham modified by Hulse have been discussed above.

Re claim 11: Hulse et al further teaches grooves [26] on a holographic film applied to the first member to allow the light to be emitted from the first member [10].

Graham modified by Hulse fails to teach using striation.

Oyama et al teaches a translucent member [10] which is illuminated by a light source [20] through the end [28] of the fiber. The fiber [10] further including striations [16] formed on the light radiating surface of the first member to cause light entering the edge of the body to be emitted out of the body through the radiating surface. [See figure 1, column 4 line 17 through column 5 line 16]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first member [16] of Graham modified by Hulse to include striations as taught on the fiber [10] of Oyama in order to provide a uniform diffuse light out of the first member and through to the second member [14] of Graham at an arc larger than provided by the reflector [44] of Graham.

Re claim 16: As applied to Graham modified by Hulse and Oyama, Oyama further teaches a plurality of striations cut in the surface of the first translucent member; the V-shaped striations thus created extend at least substantially throughout the length

of the first member and are spaced apart around at least a part of the extent of the surface of the first member.

Although Graham modified by Hulse and Oyama fails to explicitly suggest the depth and width of the striations, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cut the grooves between .5 and 1 mm in size to optimize the diffusion and light emitting effects for the translucent first member, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum range involves only routine skill in the art. In re Aller, 105 USPQ 233.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham modified by Hulse and Oyama as applied to claim 11 in further view of Yamamoto et al (US 6,601,984). The teachings of Graham modified by Hulse and Oyama have been discussed above.

Graham modified by Hulse and Oyama fails to teach increasing the striation in the central portion of the first member away from the ends.

Yamamoto et al teaches a translucent member [1] with at least one LED [2] disposed on each end of the member [1], and grooves [11] formed in the first member for diffracting light out of the member. Yamamoto teaches increasing the striation [increasing the density of grooves by moving them closer together] in the central region of the light member [1] further from the LEDs at the edges of the member. "It is desirable to set a wider interval between grooves 11 on the ends of the light-guiding

member 1, that is, near the LEDs 2, and to gradually narrow the intervals going away from the LEDs 2.” [See figures 1 and 2, column 4 line 66 through column 5 line 62]

It would have been obvious to one of ordinary skill in the art to increase the striation of the first member [16] of Graham modified by Hulse and Oyama in the central portion of the member away from the light sources in order to, “Achieve a uniform illumination along the entire length of the light-guiding member 1,” as suggested by Yamamoto.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham modified by Hulse et al as applied to claim 2 in further view of Strack et al (US 3,901,674). The teachings of Graham modified by Hulse have been discussed above.

Graham modified by Hulse et al fails to teach spacers between first member [10] and second member [14].

Strack et al teaches optical fiber [16] with a first member [rod 18], a second member [tube 20] surrounding the first member and forming an air gap [26], wherein support means [24] are provided in the gas space to maintain a predetermined special relationship between the first and second members. [See figure 2, columns 2 and 3]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the spacers [24] of Strack between the members [14 and 16] of Graham modified by Hulse in order to maintain the first member [16] centered in the tube member [14] as suggested by Strack as the purpose of the spacers such that the gap remains constant and subsequent lighting effects uniform.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham modified by Hulse, Oyama and Yamamoto et al (US 6,601,984) as applied to claim 12 above in further view of Kuo (US 2004/0075994). The teachings of Graham modified by Hulse, Oyama and Yamamoto have been discussed above.

Graham modified by Hulse, Oyama and Yamamoto teaches using striation which increases away from the light sources but fails to suggest doing so with additional striations occupying less than the overall length of the first member as claimed.

Kuo teaches a first translucent member [light guide 2] having striations [veins 30] disposed on the surface therefore to facilitate light incident on the light guide [2] view light source [1] disposed at the end thereof being emitted from the light guide [2] out of the emission face thereof. As clearly shown in figure 7, the density of the veins [31] increases with distance from the light source, thereby maintaining uniform emission, in a manner similar to that suggested by Yamamoto. Further, the increase in density/number of veins at the far side of the light guide is provided by angling the veins such that they meet at a central distance position and some of said veins do not originate at the incident face of the light guide, thereby occupying less than the overall length of the light guide as claimed. [See figures 7 and 8, paragraphs 19-25]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the striations of Graham modified by Hulse, Oyama and Yamamoto to include striations that do not run the full length of the translucent member [10] as shown in Kuo as just one of a number of striation patterns known in the art to

refract more light out of a light guide at a position further from the light source in order to maintain a uniform light emission pattern.

Response to Arguments

12. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment to change the transmission characteristics of the first member to being a transparent member with primary diffusion.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thompson (US 4,651,043) teaches an end lit rod [16], inside and spaced from a translucent tube [34].

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID R. CROWE whose telephone number is (571)272-9088. The examiner can normally be reached on 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee can be reached on 571-272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DRC
12/8/2008

/Jong-Suk (James) Lee/
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Art Unit 2885